

What is claimed is:

1. An air dryer for drying air, comprising:

a refrigerant system and

a heat exchanger comprising a phase change material,

wherein the refrigerant system is adapted for cooling the heat

exchanger.
2. An air dryer according to claim 1, wherein the air is selected from a
group consisting of gas, compressed gas and compressed air.
3. An air dryer according to claim 1, further comprising a condensate
separator.
4. An air dryer according to claim 1, wherein the condensate separator
further comprises a wire mesh.
5. An air dryer according to claim 4, wherein the wire mesh comprises
stainless steel, copper, or plastic.

6. An air dryer according to claim 1, wherein the phase change material changes from solid to liquid and from liquid to solid.
7. An air dryer according to claim 6, wherein the phase change material is an organic paraffin.
8. An air dryer according to claim 1, wherein the heat exchanger comprises an air-to-air exchanger and an air-to-refrigerant exchanger.
9. An air dryer according to claim 8, wherein the air-to-refrigerant exchanger comprises the phase change material.
10. A method of drying air, which method comprises:
providing a refrigerant system and
a heat exchanger comprising a phase change material, and
using the refrigerant system for cooling the heat exchanger.
11. A method of drying air according to claim 10, wherein the air is selected from a group consisting of gas, compressed gas and compressed air.

12. A method of drying air according to claim 10, further comprising a condensate separator.
13. A method of drying air according to claim 10, wherein the condensate separator further comprises a wire mesh.
14. A method of drying air according to claim 13, wherein the wire mesh comprises stainless steel, copper, or plastic.
15. A method of drying air according to claim 10, wherein the phase change material changes from solid to liquid and from liquid to solid.
16. A method of drying air according to claim 10, wherein the phase change material is an organic paraffin.
17. A method of drying air according to claim 10, wherein the heat exchanger comprises an air-to-air exchanger and an air-to-refrigerant exchanger.

18. A method of drying air according to claim 17, wherein the air-to-refrigerant exchanger comprises the phase change material.
19. A means for drying air, comprising:
a refrigeration means and
a heat exchanger means comprising a phase change material,
wherein the refrigeration means is adapted for cooling the heat exchanger means.
20. A means for drying air according to claim 19, wherein the air is selected from a group consisting of gas, compressed gas and compressed air.
21. A means for drying air according to claim 19, further comprising a condensate separator.
22. A means for drying air according to claim 19, wherein the condensate separator further comprises a wire mesh.
23. A means for drying air according to claim 22, wherein the wire mesh comprises stainless steel, copper, or plastic.

24. A means for drying air according to claim 19, wherein the phase change material changes from solid to liquid and from liquid to solid.

25. A means for drying air according to claim 19, wherein the phase change material is an organic paraffin.

26. A means for drying air according to claim 19, wherein the heat exchanger comprises an air-to-air exchanger and an air-to-refrigerant exchanger.

27. A means for drying air according to claim 26, wherein the air-to-refrigerant exchanger comprises the phase change material.